Mark Schulist

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INTERESTS

- Mathematics/Computing: Bayesian statistics, Markov chain Monte Carlo, approximate nearest neighbor search, simulations
- Machine Learning: Image classification, transformers, dimensionality reduction, transfer learning
- Non-academic: tennis, birding, photography, rock climbing

EDUCATION

Washington University in St. Louis   St. Louis, MO
BS in Computer Science, Minor in Physics   *Aug 2023 - May 2027*

- Cumulative GPA: 3.94/4.00

EXPERIENCE

Data Science Intern   May 2024 - Present
SeerAI

- Leveraged the Geodesic spatiotemporal platform via Python API and ArcGIS Online
- Wrote band arithmetic and inverse distance weighting middlewares in Go, utilizing expression parsing and K-D trees respectively

Research Assistant   Aug 2021 - Present
California Academy of Sciences   *San Francisco, CA*

- Developed a data pipeline to train a custom bird vocalization classifier using the Google Perch library
- Significantly improved the precision and recall of the classifier by fine-tuning the model on our own data
- Created simulations to test a Bayesian hierarchical occupancy model in R/JAGS
- Conducted avian point counts in Eldorado National Forest for the past three summers

Web Developer   Jun 2023 - Aug 2023
California Academy of Sciences   *San Francisco, CA*

- Created a website to teach researchers about food webs for a wildlife metrics project
- Developed the website to secure a grant extension

PROJECTS

Perch Agile Modeling | (GitHub Repo) | NextJS, FastAPI, SQLite, Iceberg, Python, Google Cloud   May 2024 - Present
- Developed a cloud-native platform to enable bioacoustics researchers to quickly train a custom classifier using transfer learning and the Google Perch library
- Utilized SQLite and approximate nearest neighbor algorithms to efficiently search audio feature embeddings
- Used Iceberg to store billions of rows of classifier outputs

Winner of the Master Category at Hack WashU 2024 | (GitHub Repo) | NextJS, Supabase, DeckGL   Oct 2024
- Developed a website to provide a visual representation of WashU buildings, courses, and their relevant information, available at (washucampusview.com)
- Utilized DeckGL to create a 3D map of the buildings and integrated Supabase to store the building data

Winner of Hack Case Western Reserve University 2024 | (GitHub Repo) | NextJS, MongoDB   Feb 2024
- Developed a website to aggregate all of the events at Case Western that serve free food
- Fine-tuned a GPT-3.5 model to correctly identify and rate events that serve food

Google Student Developer Club at Washington University | NextJS, MongoDB   Jan 2024 - Present
- Developed a scheduling website for the Down Syndrome Association of Greater St. Louis
- Currently Project Management Lead overseeing 5 projects designed to help the St. Louis community

TECHNICAL SKILLS

Languages: Java, Go, Python, JavaScript/TypeScript, HTML/CSS, R
Other Software/Tools: Git, Docker, Google Firebase, MongoDB, Supabase, SQLite, FastAPI, Linux, LaTeX, Typst
Data Analysis/ML: Bayesian hierarchical modeling, JAGS, scikit-learn, Tensorflow, Pytorch, Transformers